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| 09/823,127 | 03/30/2001 | Bent S. Jensen | 42390P10683 | 6836 |

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| EXAMINER |
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NEURAUTER, GEORGE C

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| ART UNIT | PAPER NUMBER |
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2143

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05/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---|--|--|
| Office Action Summary | Application No. 09/823,127 | Applicant(s) JENSEN, BENT S. | |
| | Examiner George C. Neurauter, Jr. | Art Unit 2143 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453-O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-28 are currently presented and have been examined.

Response to Arguments

Applicant's arguments filed 26 February 2007 have been fully considered but they are not persuasive.

The Applicant argues that White does not disclose frame fragmentation control information.

The specification discloses:

"Frame fragmentation control information 310 generally includes information that can be used to assemble frame fragments 300 into frames." (page 6, lines 17-18)

White disclosed:

"Upon receiving a subframe or frame transported over an xDSL link 16 (step 302), the frame processing module 44, 108 examines the reserved bits within the header of such subframe or frame to determine if such header is a fragment header (step 306). When such header is determined to correspond to a complete data frame (i.e., is not a fragment header), the received data frame is forwarded for processing in accordance with higher-layer protocols (step 308). If a fragment header is instead detected in step 306, then it is determined whether the parameter "B" has been set to "1" (i.e., B=1) within such fragment header (step 310). If so, then it is next determined

Art Unit: 2143

whether the parameter "F" has been set to "1" (i.e., F=1) within the fragment trailer for the received subframe (step 314). If the parameter "F" has not been so set, then the received subframe (B=1, F=0) corresponds to the first subframe in a subframe sequence comprising a fragmented frame. Accordingly, this first subframe is sent to the applicable re-assembly buffer 48, 120 in order to initiate assembly of such sequence (step 318)."

Therefore, White did disclose frame fragmentation control information in at least the manner as claimed.

The Applicant also continues to argue that the combined teachings of White and Isfeld do not teach appending control information to the end of the frame fragment frame. The Examiner maintains the views previously presented. White expressly discloses both appending control information to the end of a frame fragment frame or "subframe" as described in White and a first frame fragmentation indicator ("B"; see paragraph 0046). While White discloses that this first frame fragmentation indicator is within a header of the subframe, White expressly discloses the inclusion of frame fragmentation control information appended to the end of the subframe using a trailer. White expressly suggests that variations of the invention are possible (paragraph 0056). Therefore, in addition to the remarks

Art Unit: 2143

made throughout the prosecution of the instant application, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of White to include the first frame fragmentation indicator within the trailer of the subframe based on the teachings and suggestions of White. It would have been obvious to one of ordinary skill in the art to try to include such information within the trailer of the subframe, particularly since the Applicant has failed to argue why inclusion of such information within a trailer as opposed to a header is an unobvious difference. Since the claim nominally recites appending such information to a frame fragment frame without any specific recitations as to how the invention functions using the appended information including any specific processing of the frame fragment frame using the appended information, the Examiner submits that it would have been obvious to one of ordinary skill in the art to place control information within a trailer based on the teachings and suggestions in White since the recited steps of transmitting and receiving frame fragment frames and extracting low priority and high priority frame data segments to create frame fragment frames would be accomplished in at least a similar manner as described in White.

Art Unit: 2143

The Applicant continues to argue that there is no motivation to combine the teachings of White and Isfeld. Again, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As has been shown, Isfeld discloses the use of channel numbers with a fragmented frame in the context of transmission and reception of fragmented messages and frames in order to expressly indicate the logical channel on which the frame travels (see column 3, lines 32-41; column 8, line 52-column 9, line 15 of Isfeld). Therefore, there is sufficient motivation within Isfeld to combine these teachings with the teachings of White to incorporate channel numbers within frame fragment frames in order to render the claimed invention obvious in view of the combined teachings of these references.

The Applicant also continues to argue that White or Isfeld teach an extension indicator as claimed.

Art Unit: 2143

The specification discloses:

"Frame fragment control information 310 can also include an optional extension indicator 335. The extension indicator 335 is generally used to extend or add fields to the frame fragment control information 310." (page 7, lines 10-12)

White expressly disclosed:

"The seven most significant bits of template fragmentation trailer 180 are reserved and accorded values as necessary to ensure all fragment trailers are distinguished from all fragment headers and from any other framing headers and/or flags which may be introduced during processing of a generic HDLC data frame 124." (paragraph 0047)

As is understood by those of ordinary skill, reserved control information within frames are used to allow for expansion and future unknown uses of control information may be deemed necessary and/or desirable in future implementations. In view of the above and also as shown in White, White does disclose extension indicators in the sense as claimed.

Therefore, the Examiner is not persuaded by the submitted arguments and the claims as currently presented are not in condition of allowance.

Art Unit: 2143

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Pub. US 200210150100 A1 to White in view of US Patent 5,828,835 to Isfeld.

Regarding Claims 1-3, 9, 10, 16, 21-23, White discloses a network system, method and apparatus for adaptive frame fragmentation, (Abstract; Figs. 1-13; paragraphs -#0013-0015: & Claims 1-37) comprising:

Art Unit: 2143

- a sending unit to transmit a first frame fragment, the first frame fragment including a first (payload - entire frame per pending Claim 10) data segment, extracted from a low priority frame and a first frame fragmentation control information appended to the end of the first data segment, the first frame fragmentation control information includes at least (i) a first frame fragmentation indicator to specify whether a frame fragment is a first fragment generated from the frame, (ii) a frame fragment sequence number to specify a sequential order number assigned to the first frame fragment generated from the low priority frame, and (iii) a channel number, (paragraphs - #0030-0038; 0042-0052; & Claims 1-37), (Examiner notes that White clearly teaches appending a first identifying field to a first subframe, wherein said identifying field indicates the relative position of said first subframe within a fragmented frame, which obviously reads upon Applicant's appended "fragmentation control information" encompassing "a first frame fragmentation indicator to specify whether a frame fragment is a first fragment generated from the frame", or "a frame fragment sequence number to specify a sequential order number assigned to the first frame fragment generated from the low priority frame". Specifically, Examiner finds that one of ordinary skill in the art at the time of invention by Applicant would have obviously

Art Unit: 2143

considered a first frame fragmentation indicator or a frame fragment sequence number to be "indicative of the relative position of a subframe within a fragmented frame" for purposes of adaptively identifying and fragmenting frames of lower priority into smaller subframes in order to minimize the time spent by frames of higher priority queuing for transmission over the link - paragraph #0033); and the sending unit to transmit a second frame fragment after transmitting the first frame fragment, the second frame fragment including a high priority frame and a second frame fragmentation control information appended to the end of the high priority frame, (per pending Claims 2 & 22), (paragraphs #0030-0038; 0042-0052; & Claims 1-37); and the sending unit to transmit a third frame fragment after transmitting the second frame fragment, the third frame fragment including a second (payload) data segment extracted from the low priority frame and a third frame fragmentation control information appended to the end of the second data segment, (per pending Claims 3 & 23), (paragraphs - #0030-0038; 00420052; & Claims 1-37); and

a receiving unit to receive the first, second and third frame fragments transmitted by the sending unit, (paragraphs - #0030-0038 & 0042-0052).

Art Unit: 2143

Though White clearly teaches frame fragmentation and the appending of a first identifying field, (frame fragmentation control information) to a first subframe, (White Claims 1-37), White does not specifically enumerate the inclusion of a channel number within that first frame fragmentation control information. Isfeld Clearly teaches priority based message fragmentation routing process wherein the message fragments clearly include a first frame fragmentation indicator, a last frame fragment indicator, a frame fragment sequence number, a channel number and the appending of data, (Isfeld Figs. 13-17; Col. 27, lines 62-67; Col. 28; & Col. 29, lines 1-35), wherein it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to include the channel information in the first frame fragmentation control information appended to the end of the first data segment.

The motivation to incorporate the Isfeld message/channel information fragment into the White priority-based message fragmentation method is found within White which enumerates a need for a technique which would minimize the latency and jitter exhibited by frame-based communication systems by adaptively identifying and fragmenting frames of lower priority into smaller subframes in order to minimize the time spent by frames of higher priority queuing for transmission over the link,

Art Unit: 2143

(White paragraphs # 0012 & #0033), wherein knowledge of the channel number is obviously necessary to the proper transmission and receipt of said frame data. Moreover, Examiner notes that the inclusion of channel information in the data packet was well known in the art at the time of invention by Applicant, thus in light White's teaching of appending data, inclusion of channel information within said data would have been obvious and as such, is found to be unpatentable. Thus Claims 1-3, 9, 10, 16, 21-23 are found to be unpatentable over the combined teachings of White and Isfeld.

Regarding Claims 4-8, 12-15, 17-20 & 24-28, the combined teachings of White and Isfeld are relied upon as noted herein. As noted above, White discloses a network system, method and apparatus for adaptive frame fragmentation incorporating a frame relay protocol, (paragraph #0043), comprising frames and frame fragments, (paragraphs #0043-0044), a first frame fragmentation indicator within the first frame fragmentation control information, (per pending Claims 4, 12, 17 & 24), a last frame fragment indicator, (per pending Claims 7, 15, 17 & 27), a frame fragment sequence number within the first frame fragmentation control information, (per pending Claims 5, 13, 18 & 25), (paragraphs #0045-0046, 0054 & 0055).

Art Unit: 2143

Though White clearly teaches frame fragmentation, White does not specifically enumerate the inclusion of a channel number within the first frame fragmentation control information, (per pending Claims 6, 14, 19 & 26), and an extension indicator, (per pending Claims 8, 15, 20 & 28). Isfeld Clearly teaches priority-based message fragmentation routing process wherein the message fragments clearly include a first frame fragmentation indicator, (per pending Claims 4, 12, 17 & 24), a last frame fragment indicator, (per pending Claims 7, 15, 17 & 27), a frame fragment sequence number, (per pending Claims 5, 13, 18 & 25) and a channel number, (per pending Claims 6, 14, 19 & 26), (Isfeld - Figs. 13-17; Col. 27, lines 62-67; Col. 28; & Col. 29, lines 1-35). Again, as noted herein, Examiner finds that it would have been obvious to one of ordinary skill in the art at the time of invention by Applicant to include the channel information in the first frame fragmentation control information appended to the end of the first data segment. 8. Additionally, Examiner notes that regarding an extension indicator, (per pending Claims 8, 15, 20 & 28), White enumerates the reservation of the seven least significant bits of the first octet to ensure all fragment headers are distinguished from and other framing headers and/or flags which may be introduced during processing, (White paragraph #0047), as well as an FCS frame for purposes of

Art Unit: 2143

CRC error detection, (White - paragraph #0043), and Isfeld enumerates a 4-bit field for software specific command list entries, (Isfeld - Fig. 15 & Col. 25, lines 31-39), wherein either portion of the frame could obviously be used to extend, add or indicate the extension or addition of fields to the frame fragment control information. Thus Claims 4-8, 12-15, 17-20 & 24-28 are found to be unpatentable over the combined teachings of White and Isfeld.

Regarding Claim 11, the combined teachings of White and Isfeld are relied upon as noted herein. As noted above, White discloses a network system, method and apparatus for adaptive frame fragmentation incorporating a frame relay protocol, (paragraph #0043), comprising frames and frame fragments, (paragraphs #0043-0044), and payload data, (paragraph - #043), wherein it would have been obvious for said payload data to include a data segment extracted from a frame, as said frame may be any number of bytes in length, and wherein within a frame fragmentation apparatus and method, it would have been obvious to divide up large portions of data into smaller portions for faster and more reliable relay of the same. Thus Claim 11 is found to be unpatentable over the combined teachings of White and Isfeld.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

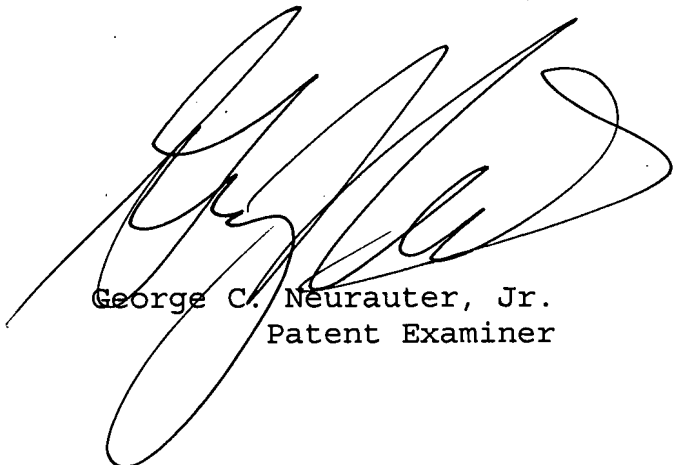
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Neurauter, Jr. whose telephone number is 571-272-3918. The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2143

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



George C. Neurauter, Jr.
Patent Examiner